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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,701	12/22/2000	James Wilson	A0312/7386/MXS	4553

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EXAMINER

JAMAL, ALEXANDER

ART UNIT	PAPER NUMBER
2643	

DATE MAILED: 06/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/748,701

Applicant(s)

WILSON ET AL.

Examiner

Alexander Jamal

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4-14-2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 2,4,6-13,15,19-22,24,25,27,28 and 30-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,14,16-18,23,26,29,36-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Based upon the submitted amendment (8-9-2004), examiner notes that claims 2,4,6-13,15,19-22,24,25,27,28 and 30-35 have been cancelled.
2. Examiner presents two sets of rejections based upon two sets of discovered prior art. The first set comprises item 5 and the second set comprises items 6-11.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1,3,** rejected under 35 U.S.C. 102(e) as being anticipated by Liu (6088385).

As per **claim 1**, Liu discloses a device that receives and processes signals from the telephone line (an adsl transceiver). The transceiver comprises a converter circuit that outputs a digital signal associated with a plurality of telephone signal protocols (adsl upstream and downstream signaling at variable rates). The converter further comprises a digital filter that converts the sample rate of the digital signal protocol in either direction to a variable sample rate (Col 3 lines 5-26) (Col 4 lines 10-45).

As per **claim 3**, Liu discloses a variable ratio decimation filter (Col 6 lines 25-55).

6. **Claim 1** rejected under 35 U.S.C. 102(e) as being anticipated by O'Toole et al. (5889856).

As per **claim 1**, O'Toole discloses a device (ABSTRACT, Fig. 6) to process signals from a telephone line supporting multiple protocols comprising a converter circuit (A/D 44) and a digital filter circuit 50 (Col 7 lines 1-53) to separate the two different signals. The digital filter circuitry comprises sample rate converter 68 (Fig. 7) that is associated with a variable sampling rate (factor of 125) (Col 9 lines 5-15). The system is programmable and supports various signaling protocols (Col 5 lines 25-37, Col 8 lines 55-67). The change in sample rate will vary depending upon the protocols chosen to be supported.

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 3,5** rejected under 35 U.S.C. 103(a) as being unpatentable over O'Toole et al. (5889856) as applied to claim 1 above, and further in view of Gong et al. (6057793).

As per **claim 3**, O'Toole discloses applicant's claim 1, a digital splitter comprising a decimation filter stage 60 (Fig. 7), and an oversampled output from an A/D converter (Col 8 lines 35-50). However, O'Toole does not specify that the two decimation filters are variable ratio decimation filters.

Gong discloses an A/D converter system comprising oversampling and decimation functions (Col 3 lines 20-30). Gong teaches the use of variable ratio decimators and interpolators cascaded in order to process incoming sample rates that are not whole number multiples of the sampling frequency (Col 4 lines 35-50) (Col 5 lines 9-20). It would have been obvious to one of ordinary skill in the art at the time of this application to implement Gong's variable ratio decimator and interpolator filters in O'Toole's decimation filter stage 60 (O'TOOLE: Fig. 7) for the advantage of allowing the system to process a wider range of input sampling frequencies.

As per **claim 5**, O'Toole discloses two decimation filters. The first filter comprises decimation stage 60 and high pass stage 62 (Fig. 7) that would comprise (in view of Gong) a first variable ratio decimation filter associated with a DSL protocol. The second filter comprises decimation stage 60, band-pass stage 66, and rate conversion stage 68 (Fig. 7) that would comprise (in view of Gong) a second variable ratio decimation filter associated with a POTS protocol.

9. **Claim 36** rejected under 35 U.S.C. 103(a) as being unpatentable over O'Toole et al. (5889856) as applied to claim 1, and further in view of Liu (6088385).

As per **claim 36**, O'Toole discloses a digital combiner (Fig. 8) comprising sample rate converter 72 and xdsl modem 70 that are sent to a D/A converter to be output on a line. However, O'Toole does not disclose a second sample rate converter.

Liu discloses an xdsl modem transceiver with variable sampling rates (Col 3 lines 5-26) (Col 4 lines 10-45). Figure 7 of O'Toole discloses sample rate converter (decimation filter) and also xdsl modem 70 (receiving signaling from a/d converter). It would have been obvious to one of ordinary skill in the art at the time of this application to implement a variable rate XDSL modem (sample rate converter) for the purpose of being able to scale-ably support any current or future xdsl protocols.

As per **claim 37**, O'Toole's system is programmable and supports multiple xdsl protocols. The interpolation filter sampling rate will vary based upon the protocol being supported during operation of the device.

10. **Claims 14,18,16,17,23,26,29,38,39** rejected under 35 U.S.C. 103(a) as being unpatentable over O'Toole et al. (5889856) and further in view of Liu (6088385).

As per **claim 14**, O'Toole discloses a digital combiner (Fig. 8) comprising sample rate converter 72 and xdsl modem 70 that are sent to a D/A converter to be output on a line. However, O'Toole does not disclose a second sample rate converter.

Liu discloses an xdsl modem transceiver with variable sampling rates (Col 3 lines 5-26) (Col 4 lines 10-45). It would have been obvious to one of ordinary skill in the art at the time of this application to implement a variable rate XDSL modem (sample rate converter) for the purpose of being able to scale-ably support any current or future xdsl protocols.

As per **claim 18**, claim rejected for same reasons as claim 14 rejection. Figure 7 of O'Toole discloses sample rate converter (decimation filter) and also xdsl modem 70 (receiving signaling from a/d converter) that would also use Liu's teachings of a variable rate xdsl modem for the same reasons as claim 14.

As per **claim 16**, the first sample rate converter increases the sampling rate (interpolates) of the POTS signal to match that of the xdsl signal.

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As per **claims 17,38,39**, O'Toole's system is programmable and supports multiple xdsl protocols. The interpolation filter sampling rate will vary based upon the protocol being supported during operation of the device. The signal programming the device is the control signal.

As per **claim 23,26**, claims rejected for same reasons as claim 18 rejection. The POTS and ADSL signals lie in different bandwidths.

As per **claim 29**, claim rejected for same reasons as claim 14 rejection.

11. **Claim 40** rejected under 35 U.S.C. 103(a) as being unpatentable over O'Toole et al. (5889856) and Liu (6088385) as applied to claims 18-39 and further in view of Fayneh et al. (6329882).

O'Toole and Liu disclose applicants claims 18,38,39, but they do not specify the details of the functional circuit blocks discloses.

Fayne et al. discloses a digital PLL used in a clock signal to reduce jitter (ABSTRACT). It would have been obvious to one of ordinary skill in the art at the time of this application to implement a phase lock loop for any circuitry utilizing a clocking signal (such as sample rate converters) for the purpose of reducing jitter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9315 for After Final communications.

AJ

June 9, 2005


CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
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